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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,127	02/19/2004	Kwang-wook Oh	YPL-0082	2678

23413 7590 09/30/2008
CANTOR COLBURN, LLP
20 Church Street
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Hartford, CT 06103

EXAMINER

BEISNER, WILLIAM H

ART UNIT	PAPER NUMBER
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1797

NOTIFICATION DATE	DELIVERY MODE
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09/30/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptopatentmail@cantorcolburn.com

Advisory Action Before the Filing of an Appeal Brief	Application No. 10/783,127	Applicant(s) OH ET AL.	
	Examiner WILLIAM H. BEISNER	Art Unit 1797	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 15 September 2008 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
- b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
- (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ They raise the issue of new matter (see NOTE below);
- (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
- The status of the claim(s) is (or will be) as follows:
- Claim(s) allowed: _____.
- Claim(s) objected to: _____.
- Claim(s) rejected: _____.
- Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:
See Continuation Sheet.
12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

/William H. Beisner/
 Primary Examiner
 Art Unit: 1797

Continuation of 11. does NOT place the application in condition for allowance because: Applicants' arguments are not found to be persuasive for the following reasons:

With respect to the combination of the reference of Blackburn and Robotti, Applicants argue that the combination is improper for the following reasons:

i) "Blackburn does not teach a valve having a gel than reversibly change its state to permit the valves to open and close" (See page 7 of the response dated 9/15/2008).

ii) "Robotti does not teach that the channel disposed between micro-valves can be used for polymerase chain reaction" (See page 7 of the response dated 9/15/2008).

iii) "Robotti also does not teach a material that transforms from a sol state into a gel state at room temperature lower than DNA denaturation temperature, annealing temperature and extension temperature and higher than room temperature" (See page 7 of the response dated 9/15/2008).

iv) "One of ordinary skill in the art would not have combined Blackburn with Robotti because they teach away from each other. In particular, the channels sizes disclosed by Robotti are much larger than those disclosed by Blackburn" (See pages 7-10 of the response dated 9/15/2008).

v) "Applicants further maintain that the Examiner has used an improper standard in arriving at the rejection of the above claims under section 103, based on improper hindsight" (See pages 10-11 of the response dated 9/15/2008).

vi) Applicants further stress that the instant invention has several advantages over the prior art devices (See page 11 of the response dated 9/15/2008).

In response to arguments i) and ii) above, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, it is the combination of the references that meets the limitations of the instant claims.

In response to argument iii) above, the reference of Robotti discloses that the gel material can be methyl cellulose which is the same material as that instantly claimed. As a result, the material disclosed by the reference of Robotti would have the same material properties as that of the instant invention and therefore inherently meets the claim language "a material that transforms from a sol state into a gel state at room temperature lower than DNA denaturation temperature, annealing temperature and extension temperature and higher than room temperature".

In response to argument iv) above, the Examiner does not agree with Applicants' characterization of the references. It appears that Applicants are comparing the channel dimensions of the reference of Blackburn with the chamber dimensions of the reference of Robotti. One can clearly see from Figure 2 of Robotti that the valves (18) are associated with microchannels (14) rather than microchambers (17). Applicants' characterization of the dimensions disclosed by Robotti are associated with microchambers (17) rather than microchannels (14). Paragraph [0024], last 11 lines, of Robotti clearly discloses that the maximum dimension of the microchannels should not exceed 250 microns which is of the same order as the microchannels of the reference of Blackburn (See pages 8-9 of Applicants' response dated 9/15/2008). In view of these disclosures, one of ordinary skill in the art would have readily recognized that the valves of the reference of Robotti could be used in the device of the reference of Blackburn. The Examiner also points to paragraph [0027] of Robotti which clearly suggests that the valves can be used in a variety of microfluidic devices.

In response to argument v) above, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In this case, it is the disclosures of the references of Blackburn and Robotti that suggest the combination and not the instant disclosure.

In response to argument vi) above, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).